

## CLAIMS:

What is claimed is:

- 1        1.     An apparatus for loading a mold cavity with particulate moldable material  
2           comprising:  
3           a moveable table member;  
4           a target area defined on said table member, said target area comprising an  
5           opening in said table member;  
6           material delivery means for delivering a measured quantity of the  
7           particulate moldable material onto said target area;  
8           a door positioned under said target area;  
9           means for moving said moveable table member between a first position  
10           where said target area is loaded and a second position where said  
11           target area is positioned over the mold cavity; and  
12           means for selectively opening said door to release the particulate moldable  
13           material into the mold cavity.
  
- 1        2.     The apparatus of claim 1 wherein said material delivery means comprises a  
2           hopper device driven in reciprocating fashion across said target area.

1        3.     The apparatus of claim 2 wherein said hopper device comprises a tapering  
2           enclosure having an opening at the bottom thereof and defining an interior  
3           space, and further comprising a screen positioned in said interior space for  
4           sifting the particulate moldable material loaded therein.

1        4.     The apparatus of claim 3 wherein said hopper device further comprises a  
2           rotating blade device positioned within said enclosure and further  
3           comprises a screen positioned above said rotating blade device and  
4           arranged such that it is vibrated by said rotating blade device.

1        5.     The apparatus of claim 4 further comprising means for driving said rotating  
2           blade device in response to said reciprocating motion of said hopper device  
3           and means for maintaining the direction of rotation of said rotating blade  
4           device during reversal in the direction of travel of said hopper device.

1       6.     An apparatus for compression molding items from particulate moldable  
2             material comprising:  
3             a compression mold having a mold core and a mold cavity, wherein said  
4                 mold cavity has a selectively moveable ring positioned around the  
5                 periphery thereof;  
6             a moveable table member positioned proximate said compression mold;  
7             a target area defined on said table member, said target area comprising an  
8                 opening in said table member;  
9             material delivery means for delivering a measured quantity of the  
10                 particulate moldable material onto said target area;  
11             a door positioned under said target area for selectively releasing the  
12                 particulate moldable material into the mold cavity; and  
13             means for moving said table member to place said target area over said  
14                 mold cavity; and  
15             means for selectively opening said door and thereby releasing said  
16                 particulate moldable material into said mold cavity.

1       7.     The apparatus of claim 6 wherein said material delivery means comprises a  
2             hopper device driven in reciprocating fashion across said target area.

1       8.     The apparatus of claim 7 wherein said hopper device comprises a tapering  
2           enclosure having an opening at the bottom thereof and defining an interior  
3           space, and further comprising a screen positioned in said interior space for  
4           sifting the particulate moldable material loaded therein.

1       9.     The apparatus of claim 8 wherein said hopper device further comprises a  
2           rotating blade device positioned within said enclosure and further  
3           comprises a screen positioned above said rotating blade device and  
4           arranged such that it is vibrated by said rotating blade device.

1       10.    The apparatus of claim 9 further comprising means for driving said rotating  
2           blade device in response to said reciprocating motion of said hopper device  
3           and means for maintaining the direction of rotation of said rotating blade  
4           device during reversal in the direction of travel of said hopper device.

1        11.    A method of loading a mold cavity of a compression mold with particulate  
2                moldable material comprising:  
3                positioning a moveable table member proximate the compression mold,  
4                        wherein said table member has defined thereon:  
5                                a target area comprising an opening in said table member;  
6                                material delivery means for delivering a measured quantity of  
7                                        the particulate moldable material as a layer onto said  
8                                        target area; and  
9                                a door positioned under said target area for selectively  
10                                        releasing the particulate moldable material into the  
11                                        mold cavity;  
12                loading said target area from said material delivery means;  
13                selectively moving said table member to place said loaded target area over  
14                        the mold cavity; and  
15                opening said door to release said particulate moldable material into the  
16                        mold cavity to create a layer of particulate moldable material therein.

- 1        12.    The method of claim 11 wherein said material delivery means comprises a  
2                hopper device driven in reciprocating fashion across said target area.
- 1        13.    The method of claim 12 wherein said hopper device comprises a tapering  
2                enclosure having an opening at the bottom thereof and defining an interior  
3                space, and further comprising a screen positioned in said interior space for  
4                sifting the particulate moldable material loaded therein.
- 1        14.    The method of claim 13 wherein said hopper device further comprises a  
2                rotating blade device positioned within said enclosure and further  
3                comprises a screen positioned above said rotating blade device and  
4                arranged such that it is vibrated by said rotating blade device.
- 1        15.    The method of claim 14 further comprising driving said rotating blade  
2                device in response to said reciprocating motion of said hopper device and  
3                maintaining the direction of rotation of said rotating blade device during  
4                reversal in the direction of travel of said hopper device.

1        16.    A method of compression molding a molded part with particulate moldable  
2            material comprising:  
3            providing a mold cavity having a peripheral rim defined thereon, with a  
4                      moveable ring member, wherein said ring member surrounds said  
5                      rim of said mold cavity;  
6            positioning a moveable table member proximate said mold cavity, wherein  
7                      said table member has defined thereon:  
8                              a target area comprising an opening in said table member;  
9                              material delivery means for delivering a measured quantity of  
10                                      the particulate moldable material as a layer onto said  
11                                      target area; and  
12                              a door positioned under said target area for selectively  
13                                      releasing the particulate moldable material into said  
14                                      mold cavity;  
15            layering the particulate moldable material onto said target area on said table  
16                      member from said material delivery means;  
17            selectively moving said table member to place said target area over said  
18                      mold cavity;

19 opening said door to release the moldable material into said mold cavity to  
20 thereby create a layer of particulate moldable material therein;  
21 forcing a mold core against said mold cavity and said moldable material  
22 placed therein, thereby compressing said moldable material, and  
23 heating said moldable material to form a molded part; and  
24 moving said mold core and said ring member to expose the molded part.

1 17. The method of claim 16 wherein said material delivery means comprises a  
2 hopper device driven in reciprocating fashion across said target area.

1 18. The method of claim 17 wherein said hopper device comprises a tapering  
2 enclosure having an opening at the bottom thereof and defining an interior  
3 space, and further comprising a screen positioned in said interior space for  
4 sifting the particulate moldable material loaded therein.

1 19. The method of claim 18 wherein said hopper device further comprises a  
2 rotating blade device positioned within said enclosure and further  
3 comprises a screen positioned above said rotating blade device and  
4 arranged such that it is vibrated by said rotating blade device.



1        20.    The method of claim 19 further comprising driving said rotating blade  
2                device in response to said reciprocating motion of said hopper device and  
3                maintaining the direction of rotation of said rotating blade device during  
4                reversal in the direction of travel of said hopper device.